8.7 TRAFFIC

8.7.1 Affected Environment

Region of Influence

The ROI for traffic and transportation resources is the travel corridor between Kawaihae Harbor and PTA, which generally follows Saddle Road, Māmalahoa Highway, and Queen Kaʻahumanu Highway. During the field reconnaissance, convoys were observed using Waikoloa Road and Queen Kaʻahumanu Highway rather than Kawaihae Road, which would require the convoy to travel through Waimea. However, the proposed road also may affect a section of Kawaihae Road, depending on the alignment selected.

Regional Transportation System

The major urban areas on the island of Hawaiʻi are Hilo, which is on the eastern side of the island, and Kailua-Kona, which is on the western side. Air service to these centers is provided by Hilo International Airport and Kona International Airport, respectively.

Generally, state highways around the island link the major population centers. The only roadway across the central part of the island is Saddle Road. With minor exceptions within the urban areas, the major roads are two-lane roadways.

The major roadways on the island are Queen Kaʻahumanu Highway, Māmalahoa Highway, Hawaiʻi Belt Road, Volcano Highway, Kawaihae Road, and Waikoloa Road (Figure 8-18).

The LRLTP was completed in May 1998 (Fredric R. Harris, Inc. 1998) and identified several locations where the highway system was over capacity. The deficient sections affecting this project are along Kawaihae Road, east of Māmalahoa Road, and Queen Kaʻahumanu Highway between Kona International Airport and Keauhou.

Accident History

The most recent accident data available are found in the LRLTP and are based on 1992 statistics. The plan identified the intersection of Queen Kaʻahumanu Highway and the Kona Airport Access Road as one of the top 12 accident locations on the island; all the remaining high accident locations are on the east side of the island. The intersection of Queen Kaʻahumanu Highway and the Kona Access Road has since been signalized.

Public Transportation

Public transportation is provided by the Hele-on bus system. The system does not provide service along Saddle Road and thus does not provide service to PTA.

Figure 8-18
Approximate Alignment and Crossing Locations at Pōhakuloa Training Area

Local Transportation System

Saddle Road

Saddle Road (SR 200) is a two-lane, two-way roadway that connects PTA with Māmalahoa Highway. The posted speed limit is 45 mph (72 kmph); however, a more practical speed limit is 30 to 35 mph (48 to 56 kmph) because of the deteriorated pavement conditions, constrained alignment, and several one-lane bridges. Advisory speed limits are as low as 25 mph (40 kmph). The ADT is approximately 400 vpd.

Māmalahoa Highway

Māmalahoa Highway (SR 190) is a two-lane undivided state highway connecting Kailua-Kona with Waimea. The posted speed limit is 55 mph (89 kmph) between Waikoloa Road and approximately one mile (1.6 kilometers) south of Waimea; the remaining section is 35 mph (56 kmph). The ADT between Waikoloa Road and south of Waimea is 5,200 vpd; within Waimea, the ADT is approximately 7,000 vpd.

Waikoloa Road

Waikoloa Road runs between Queen Kaʻahumanu Highway on the west and Māmalahoa Highway on the east. It is a two-lane undivided roadway, except for a short section midway that is a four-lane divided roadway. This section is posted for a 35 mph (56 kmph) speed limit; west of this section, the speed limit is 45 mph (72 kmph). The speed limit to the east is 55 mph (89 kmph). No traffic volume data were available for Waikoloa Road.

Queen Kaʻahumanu Highway

Queen Kaʻahumanu Highway (SR 19) is a two-lane state roadway connecting Kailua-Kona with Kawaihae. The posted speed limit is 55 mph (89 kmph). The ADT between Waikoloa Road and Kawaihae Road is 10,400 vpd.

Kawaihae Road

Kawaihae Road runs east-west between Waimea and Kawaihae. East of Waimea, the speed limit varies between 35 and 55 mph (56 and 89 kmph) with speed limits reduced to 25 mph (40 kmph) near schools and at the intersection of Kawaihae Road at SR 250, which is a congested area. The ADT varies from approximately 17,000 vpd in Waimea to 8,000 vpd just east of Queen Kaʻahumanu Highway.

8.7.2 Environmental Consequences

Summary of Impacts

A summary of traffic impacts at PTA is shown in Table 8-15. Construction and use of PTA Trail would result in less than significant impacts on intersection operations, roadway segment operations, and construction traffic. There would be no parking impacts. There would be no traffic impacts under No Action.

Table 8-15
Summary of Potential Traffic Impacts at PTA

Impact Issues	Proposed Action	Reduced Land Acquisition	No Action
Intersection operations	⊙+	⊙+	○
Roadway segment operations	⊙+	⊙+	○
Construction traffic	⊙	⊙	○
Parking	○	○	○

In cases when there would be both beneficial and adverse impacts, both are shown on this table. Mitigation measures would only apply to adverse impacts.

LEGEND:

⊗ = Significant
⊘ = Significant but mitigable to less than significant
⊙ = Less than significant
○ = No impact
\+ = Beneficial impact
N/A = Not applicable

Proposed Action (Preferred Alternative)

Strykers would be used, up to one brigade level, for off-road training. Troops would continue to be transported via aircraft or marine vessel from SBMR to PTA. Troops would be transported from Kawaihae Harbor to PTA by Strykers or trucks up to one brigade level plus support vehicles. There would be up to 10 trucks and 24 Strykers per trip.

A perpetual easement of 132 acres (53 hectares) would be acquired for the proposed PTA Trail. The proposed alignment for the new road is shown on Figure D-19. The road is proposed on existing, private plantation roads between PTA and Kawaihae Harbor. After the Proposed Action is implemented, users of those plantation roads would use other roads to access their agricultural lands. The new road is a proposed two-lane gravel road. It would be 24 feet (7 meters) wide and 30 miles (55 kilometers) long, connecting Kawaihae Harbor to PTA. The public would not use this proposed military vehicle trail.

Less than Significant Impacts

Intersection operations. PTA Trail would cross state highways at Kawaihae Road north of Queen Kaʻahumanu Highway, at Kawaihae Road east of Queen Kaʻahumanu Highway, and at Māmalahoa Highway north of Saddle Road.

Using the most recent traffic counts taken in May 2000 from Hawaiʻi Department of Transportation, an LOS analysis was performed for the crossings using the following assumptions:

- The maximum number of vehicles was used for calculations (four convoys of 24 vehicles sequenced at 15-minute intervals;
- The convoys would stop for traffic along the state highways, so there would be a two-way stop sign-controlled intersection; and

- The convoys would be scheduled for non-peak hours; however, this analysis assumes that they would approach the state highways during the peak hour of traffic, and, by assuming peak-hour conditions, a worst-case condition was analyzed.

According to the LOS analysis, the state highway crossings would operate at LOS C under worst-case conditions (Figure 8-19). Table 8-16 summarizes the LOS analysis. Very few delays would be experienced by highway traffic. This is because the convoys would yield to traffic along the state highways, so there would be no impact on the LOS on public highways, and no mitigation would be required.

Table 8-16
Levels-of-Service Analysis for PTA

Intersection	AM Peak Hour		PM Peak Hour	
	Delay[1]	LOS[2]	Delay	LOS
Trail at Kawaihae Road, North of Queen Kaʻahumanu Highway	15.2	C	17.6	C
Trail at Kawaihae Road, East of Queen Kaʻahumanu Highway	22.8	C	24.1	C
Trail at Māmalahoa Highway	16.1	C	16.9	C

[1]Delay is in seconds per vehicle.
[2]LOS calculated using the operations method described in the *Highway Capacity Manual* (Transportation Research Board 2002); LOS is based on delay.

The above levels of service result for existing two-lane highway crossings. The LRLTP (HDOT 1998) recommended the following:

- Widen Waikoloa Road and Queen Kaʻahumanu Highway from two to four lanes;
- Realign the western section of Saddle Road to the intersection with Māmalahoa Highway at Waikoloa Road; and
- Construct a new roadway parallel to and east of Queen Kaʻahumanu Highway, between Waikoloa Road and Kawaihae Road.

All of these improvements may affect operations of the military vehicle trail crossing by creating a wider roadway to be crossed and a new crossing. The proposed schedule for these improvements is not available, but the Saddle Road improvement was designated as "critical."

There would also be beneficial impacts to intersection operations. Because military vehicles would use PTA Trail, there would be fewer military vehicles on public roadways that could adversely affect intersection operations.

Roadway segment operations. The number of military vehicles using PTA Trail would be minimal. The maximum number of vehicles per convoy would be 24, and convoys would be

Figure 8-19
Peak Hour Volumes Worst Case Scenario at Pōhakuloa Training Area

sequenced at 15- to 30-minute intervals, so the maximum hourly volume would be 96 vehicles per hour. Convoys would be scheduled during non-peak traffic hours, thus reducing potential impacts on peak-hour traffic conditions. No mitigation would be required.

There would also be beneficial impacts to roadway segment operations. Because military vehicles would use PTA Trail, there would be fewer military vehicles on public roadways that could adversely affect roadway segment operations.

Construction traffic. The construction associated with the Proposed Action would generate additional traffic from worker vehicles and trucks, but the construction traffic would be temporary and less than significant.

To minimize traffic impacts to the surrounding community during construction, a construction traffic management program would be implemented. The program would stagger work hours to reduce impacts from construction workers during peak hours, would identify truck routes to limit truck traffic to major streets, and would designate parking for construction workers. Because project traffic does not significantly affect operations at the intersections and street segments in the project vicinity and traffic is generally free flowing, the interim construction worker traffic impacts would not be significant. No mitigation would be required.

No Impact

Parking. No parking impacts would result, and no mitigation would be required.

Reduced Land Acquisition Alternative

Traffic impacts in the PTA ROI under Reduced Land Acquisition would be the same as under the Proposed Action, however there could be a slightly greater level of military traffic on the island of Hawai'i generated by the construction and use of QTR2 at PTA rather than at SBMR.

No Action Alternative

No Impact

Intersection operations. The current baseline for traffic would continue under the No Action Alternative. Under the status quo of No Action, use of the facility and operations would remain the same as under existing conditions. Impacts to intersection operations would not occur, and no mitigation would be required.

Roadway segment operations. Under No Action, impacts to roadway segment operations would not occur, and no mitigation would be required.

Construction traffic. Under No Action, no traffic would be generated from construction activities, and no mitigation would be required.

Parking. Under No Action, no parking impacts would occur, and no mitigation would be required.